Gap Cleaning/Backgrounds

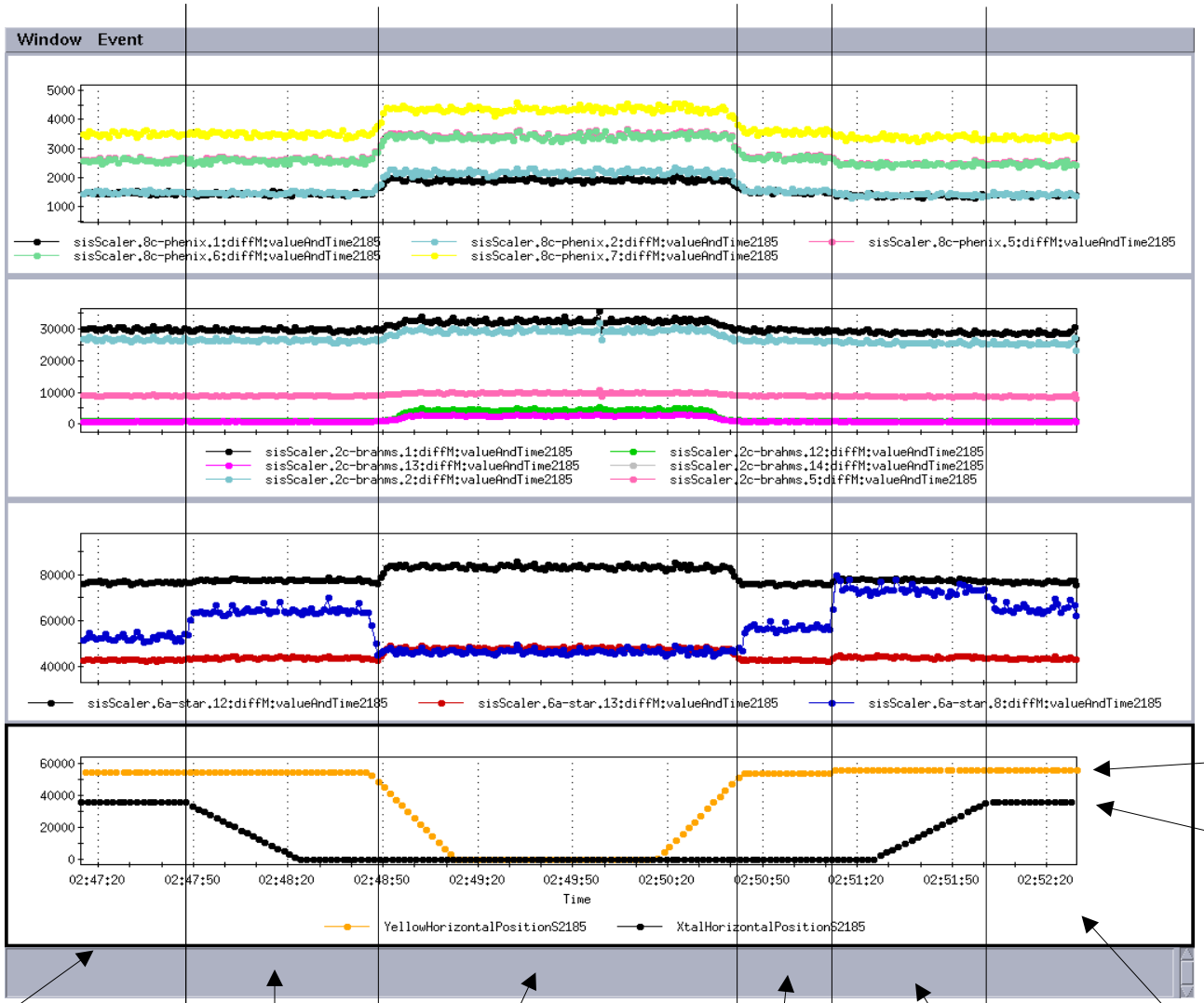
- **Collimation/Xtal**
- **Gap cleaning**
- **Available signals**
- **Improvements**

Au−Au Background

- ☛ No known effect from scrapers (neither good nor bad) during normal running conditions (outside cleaning)

- ☛ There were some "incidents" with high backgrounds (not yet understood) −>

pp Collimation



PHENIX

BRAHMS

STAR

Crystal

Scraper

both in

scraper out
crystal in

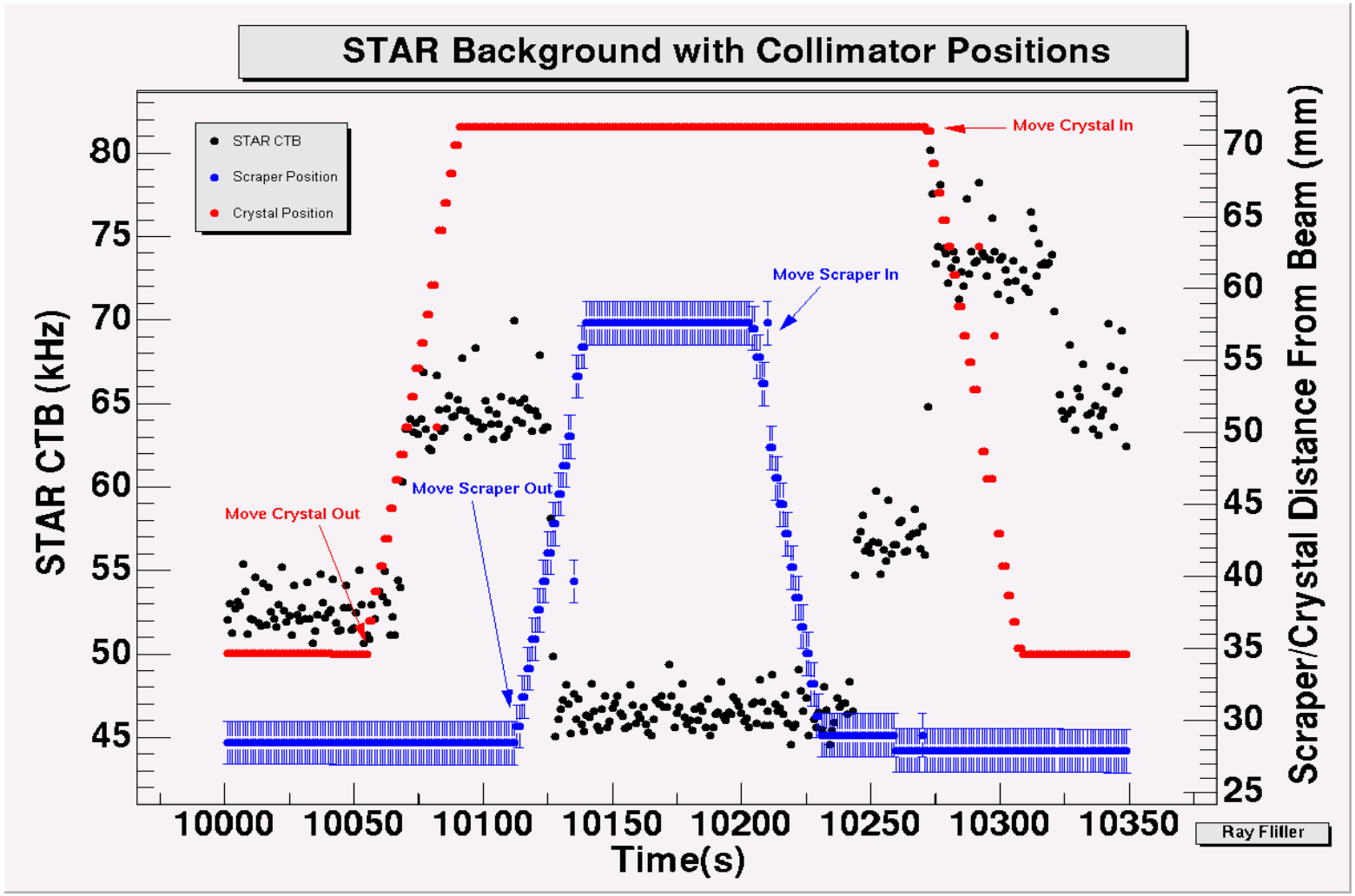
both out

scraper out
crystal in

crystal
further in

both in

Collimation/Xtal

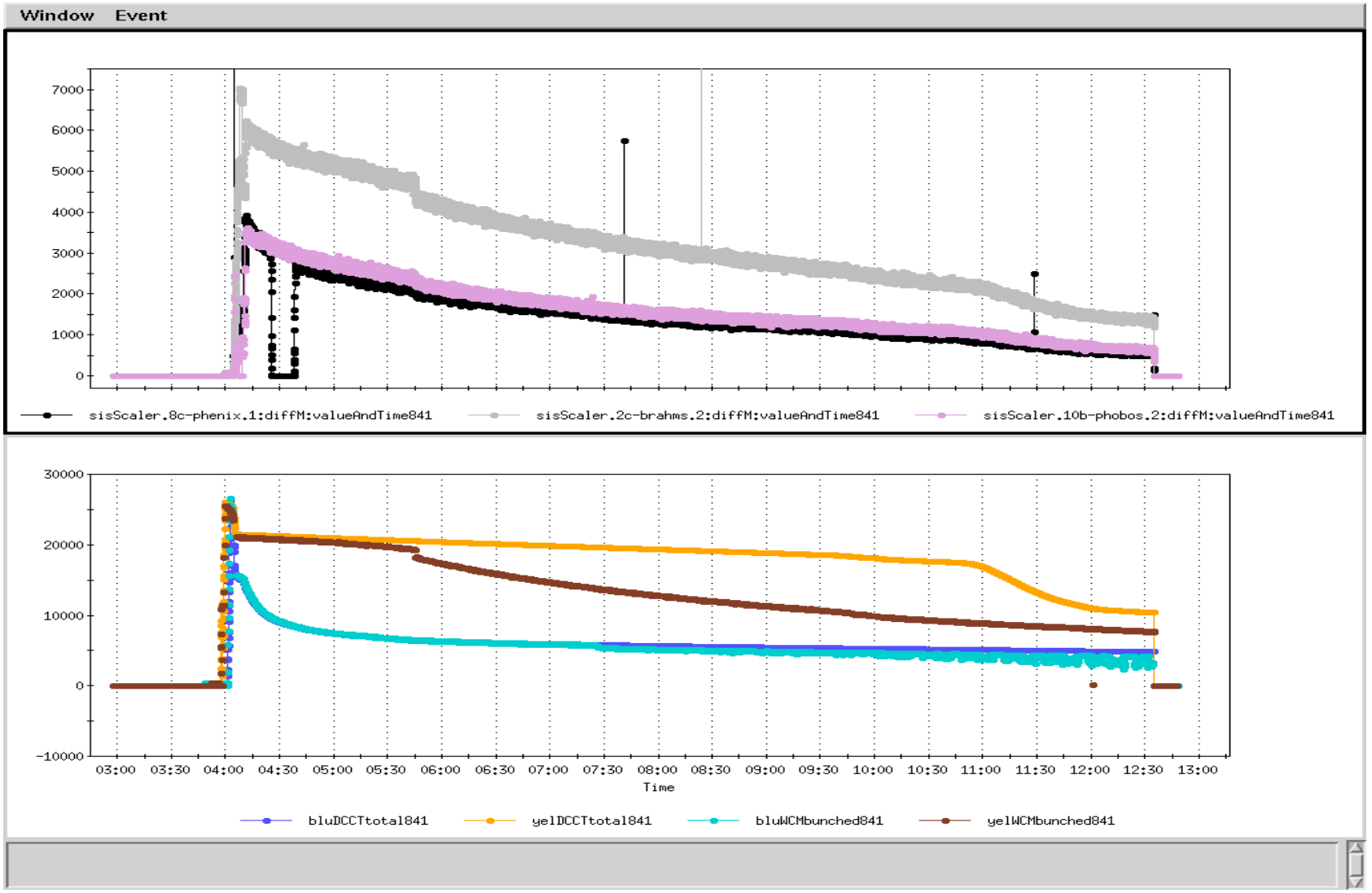


Scraper caused slightly higher background in STAR during pp run

Crystal − so far − did not improve situation

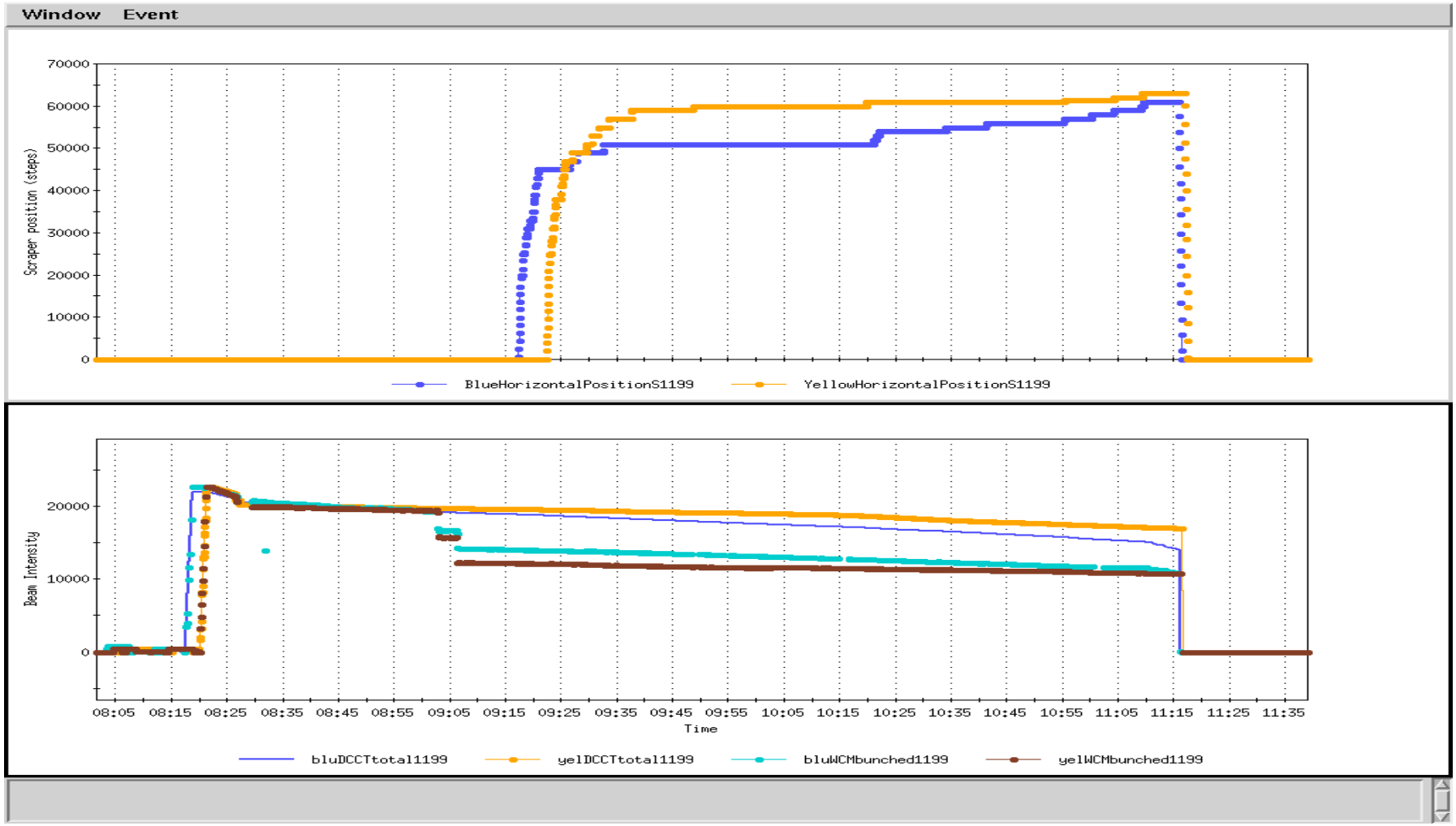
Gap Cleaning

... sometimes good:



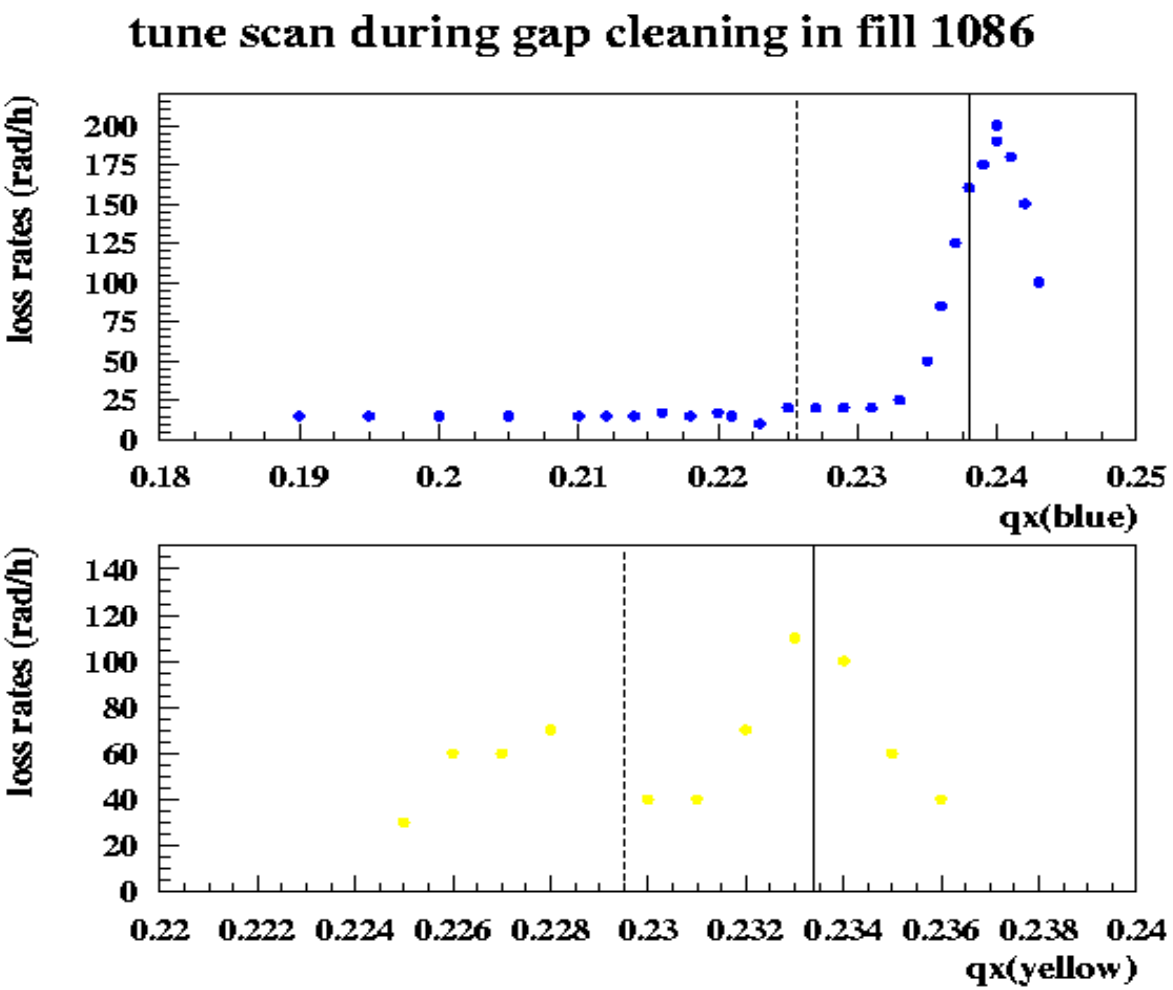
Gap Cleaning

... sometimes not so good:



=> current setup not efficient enough

Gap Cleaning



- mechanism not fully understood
- "features" not reproducible
- procedure works best with clear tune−peaks
- need better S/N if kicker is split in half
- need some commissioning time if crucial

Available Signals

- **Au−Au:**

➔ **ZDC single rates**
➔ **STAR: CTB rates?**
➔ **PHOBOS: chipmunks**
➔ **BLMs**

- **pp:**

➔ **ZDC single rates (all)**
➔ **BBC single rates (all)**
➔ **STAR: CTB rates?**
➔ **PHENIX: MuID trigger rate**
➔ **PHOBOS chipmunks**
➔ **BLMs**

Improvements

Signals:

* want more dedicated signals from detectors such as MuID trigger

Collimation:

* steer collimators during ramp (=> IPM)
* use them continuously
* install secondary collimators, crystal not yet understood
  => this year?
* possible scenario: 2nd set of collimators @ 12 o'clock

Gap Cleaning:

* no location with dispersion for momentum collimation
* poor man' s version of momentum cleaning
* software: cleaning−application
* add automated timing sweeps
* add automated frequency sweeps
* feedback loop (frequency vs. response amplitude)

Improvements cont.

Other:

* improve transition/ramp
* keep transverse emittance small (from AGS) and during ramp
* control chromaticity
* instability (transverse and longitudinal) damping
* improve vacuum, bake out straight sections
* avoid losses (PLL etc.)
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